

FIG. 2

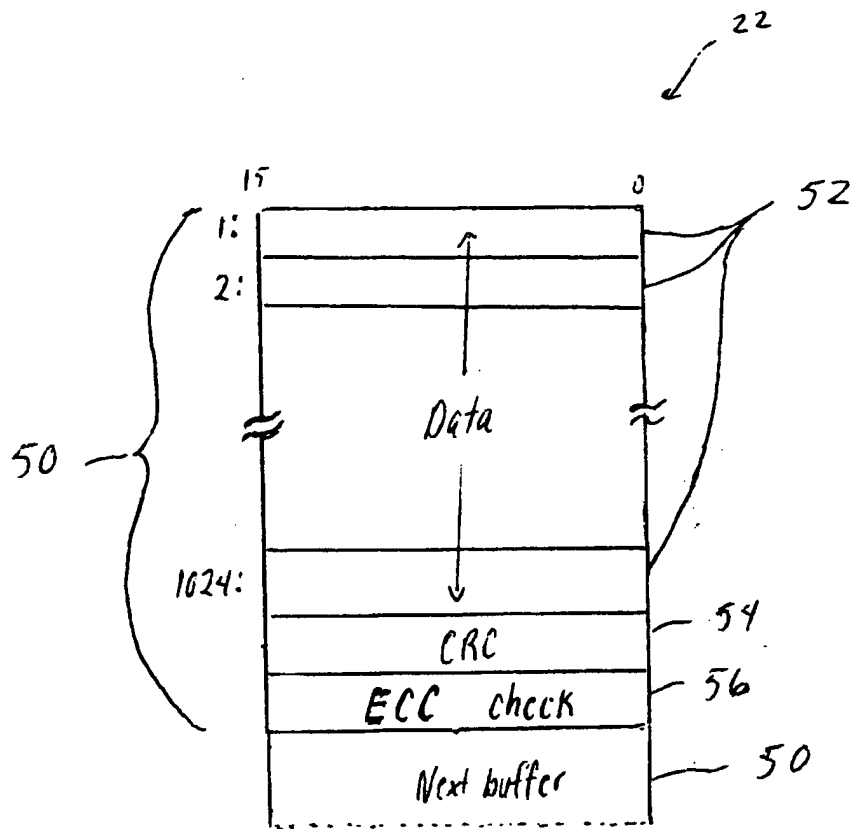


FIG. 3

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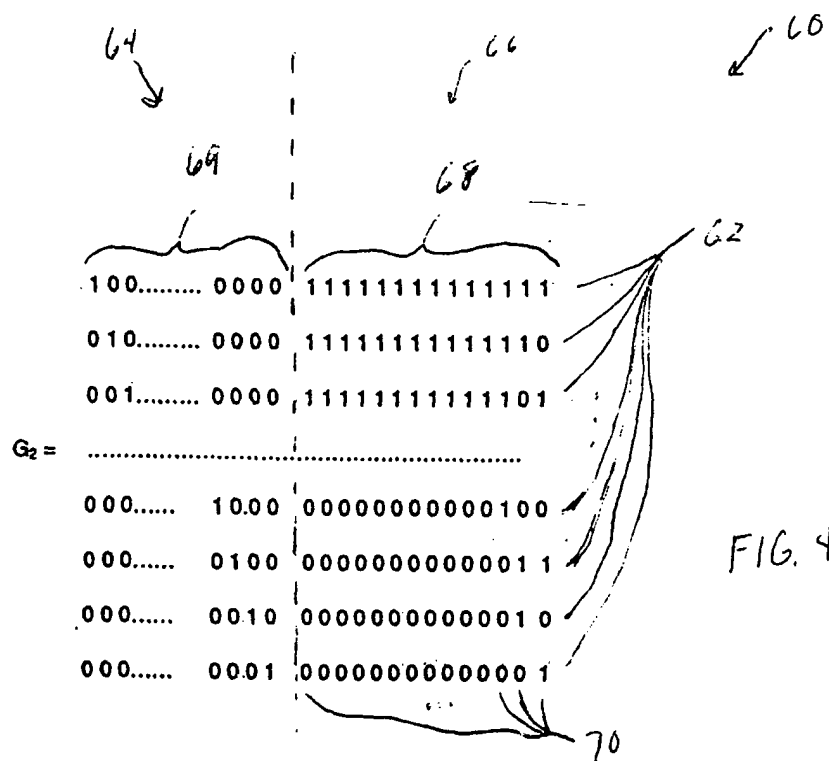


FIG. 4

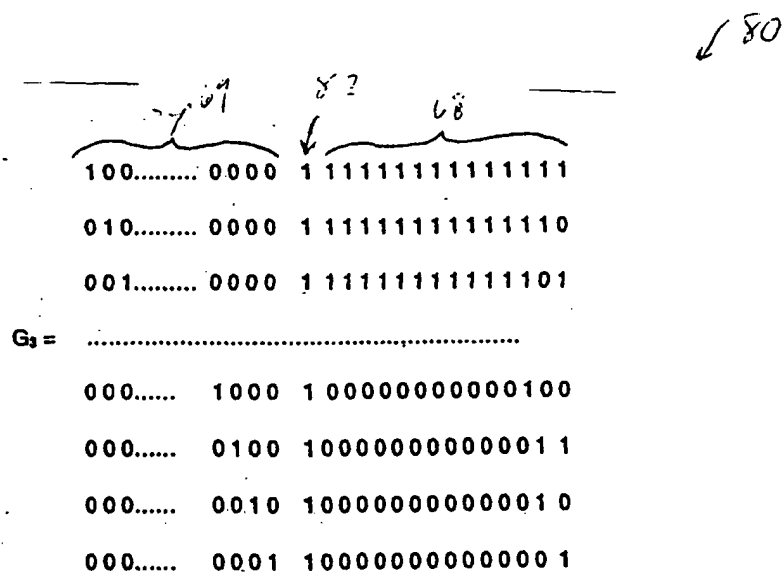


FIG. 5

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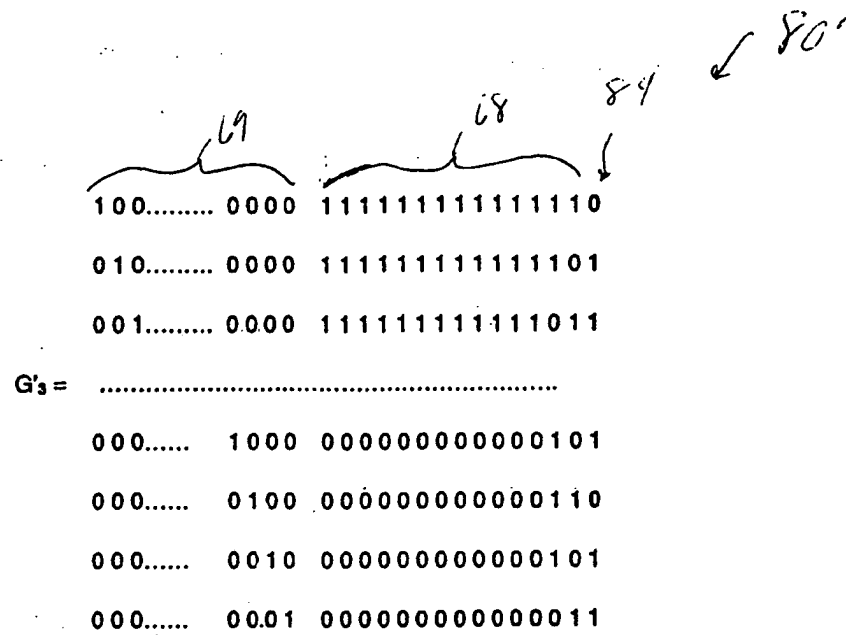


FIG. 6

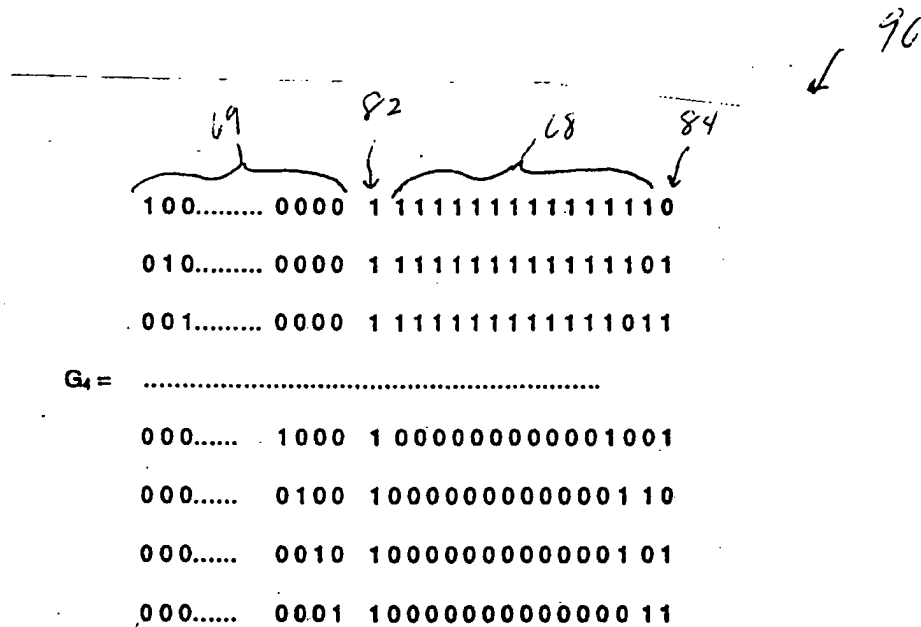


FIG. 7

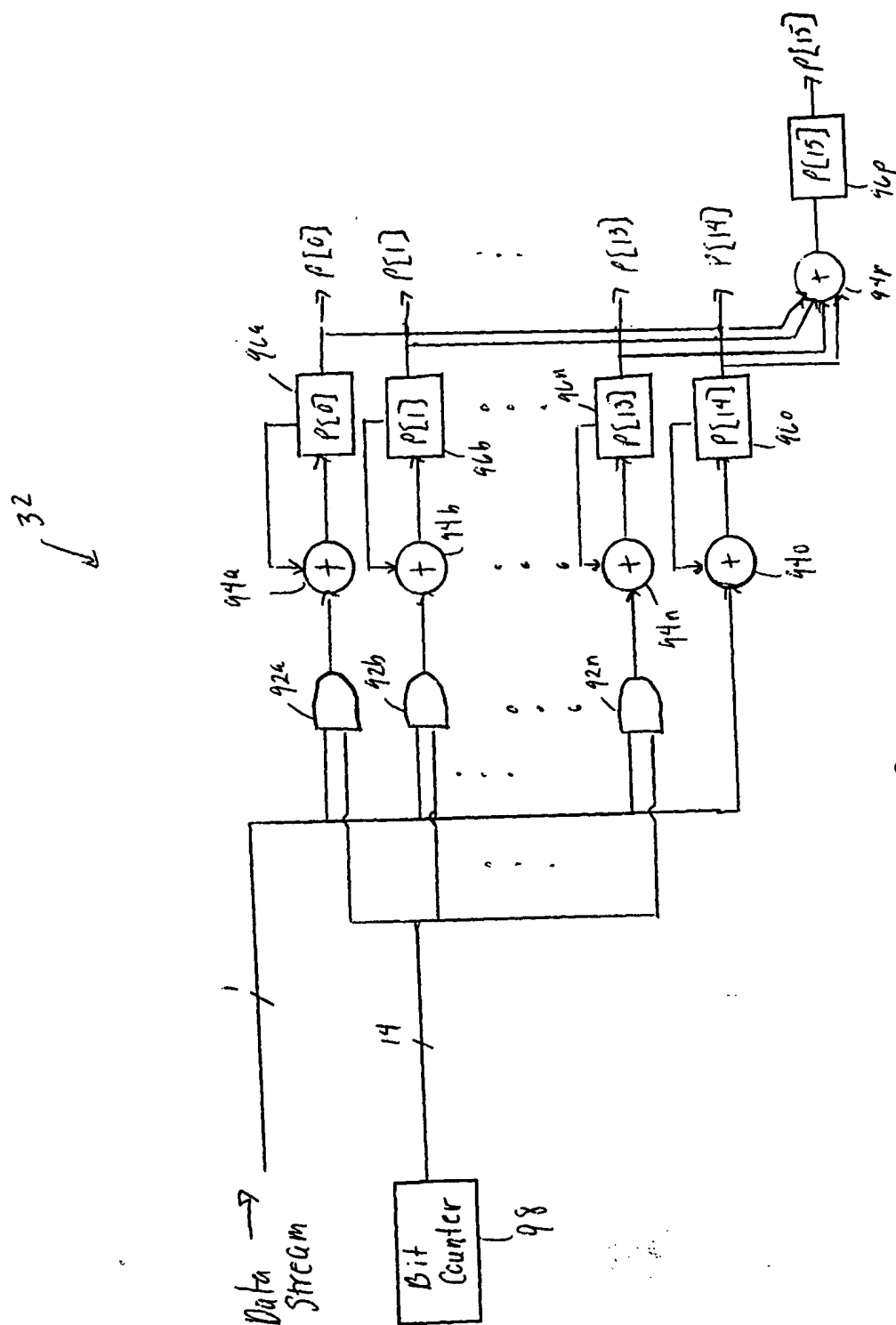




FIG. 9A

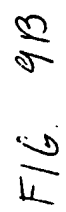


FIG. 9B

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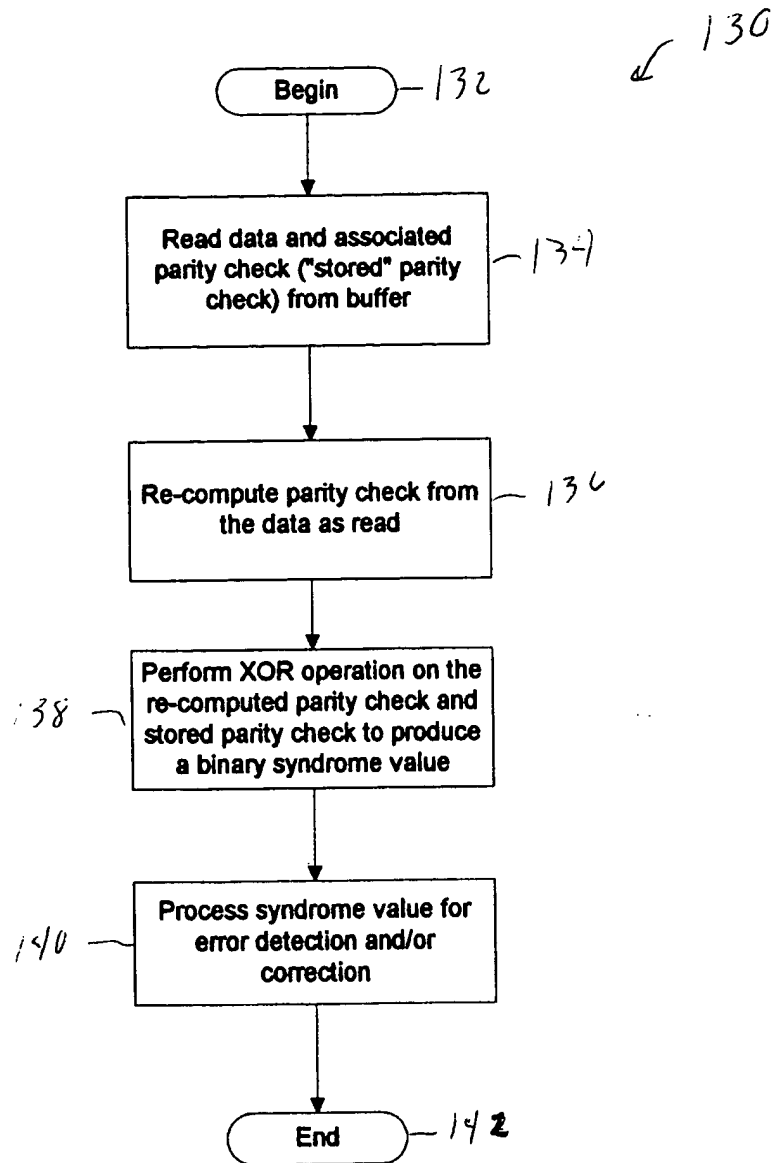


FIG. 10

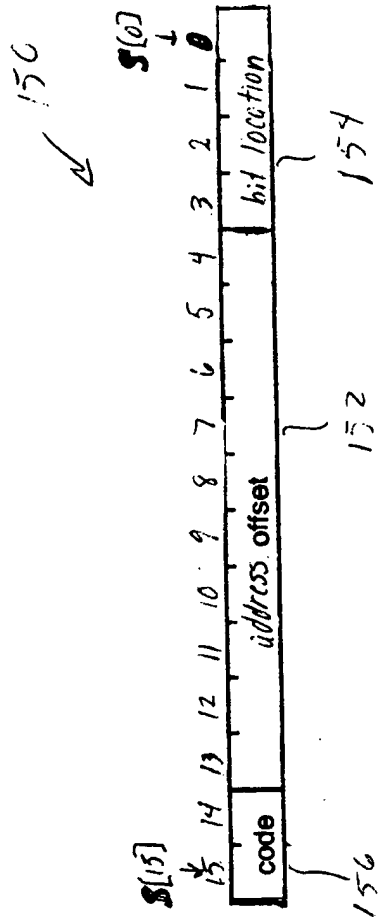


FIG. 11

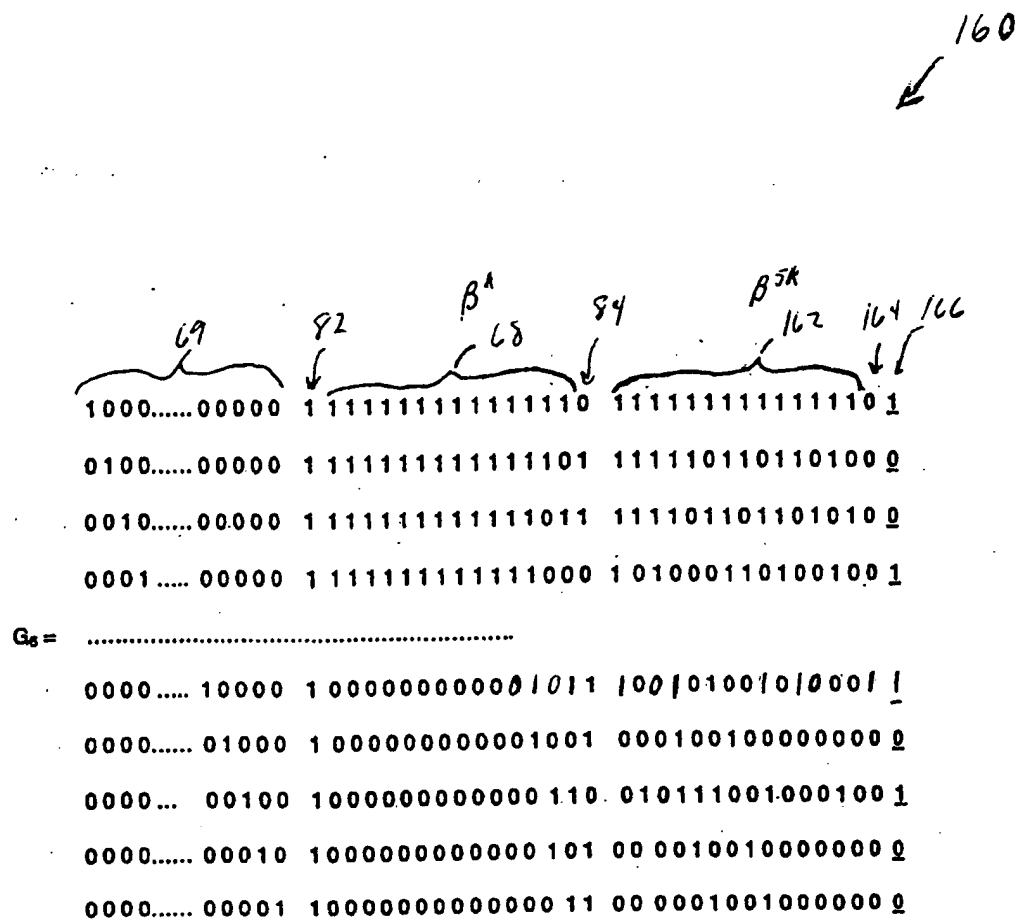


FIG. 12

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 unsigned encode()

{ int M = 14;

unsigned result;

unsigned syndrome_x_0, syndrome_x_1, syndrome_x_5;

int i, j;

unsigned parity_on_parity;

 unsigned position; // The value of position starts at 1 and ends at $2^{14} - 1$.

syndrome_x_0 = 0;

syndrome_x_1 = 0;

syndrome_x_5 = 0;

for(i=0; i < CODE_LENGTH_IN_LONG_WORD; i++) {

for(j = 0; j < 32; j++) {

if(p_tmp[i] & (1<< j)) {

syndrome_x_0 ^= 1;

position = (unsigned) i*32 + j + 1;

syndrome_x_1 ^= add_parity(position);

syndrome_x_5 ^= add_parity(fifth_power(position));

}

}

}

parity_on_parity = syndrome_x_0 ^ (syndrome_x_1 & 1) ^ (syndrome_x_5 & 1);

result = 0;

result ^= syndrome_x_5 << (30-M); // bits 16-30

result ^= syndrome_x_1 << (24-M-M); // bits 1-15

result ^= syndrome_x_0 << 1; // bit 31

result ^= parity_on_parity; // bit 0

return(result);

}

FIG. 13

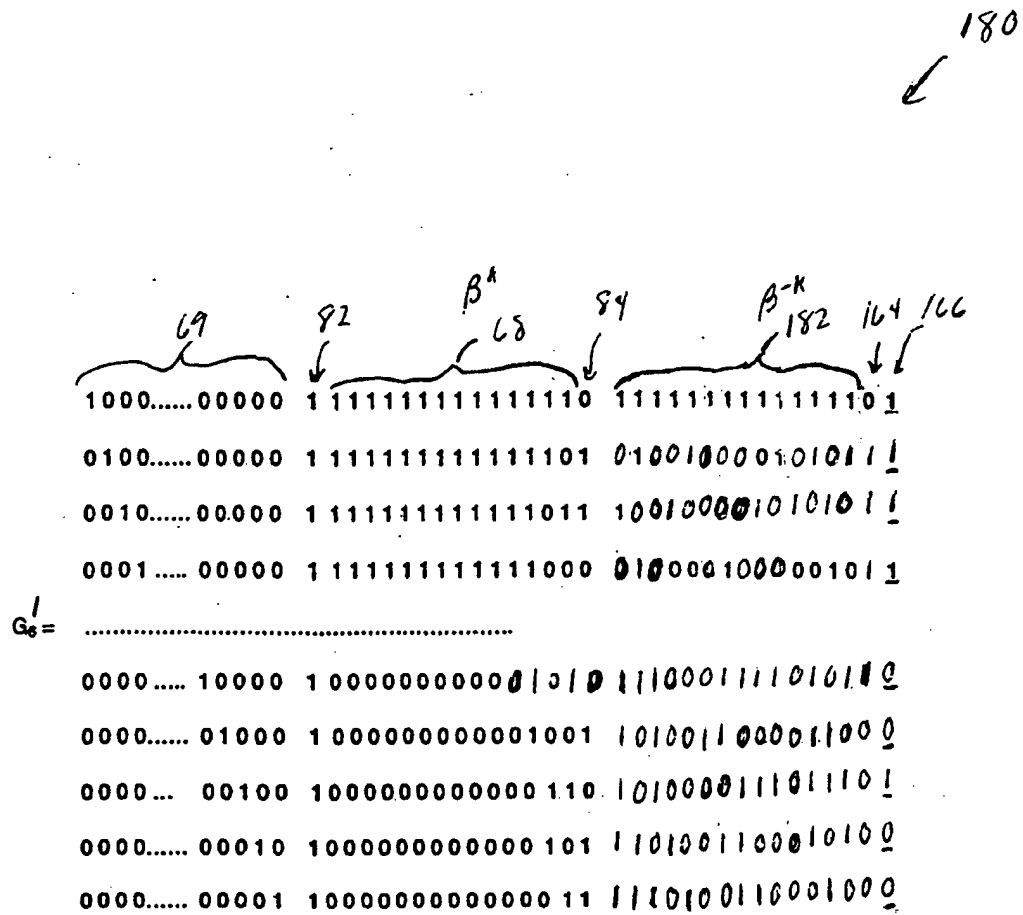


FIG. 14